

In the Claims

Delete claim 6 and amend claims 1, 7 and 10 as follows:

1. (Currently Amended) A memory cell formed on a substrate, comprising:

first and second fully depleted transfer devices each having a body region and first and second diffused electrodes, wherein said first diffused electrode of said first transfer device, said body region of said first transfer device, said second diffused electrode of said first transfer device, and a portion of said first node of said differential storage capacitor are all disposed in sequence on a first rail of semiconductor material and

a single differential storage capacitor having two nodes abutting and in electrical contact with said first diffused electrodes of each of said transfer devices, said storage capacitor having a primary capacitance and a plurality of inherent capacitances, wherein said primary capacitance has a capacitive value that is at least five times greater than that of said plurality of inherent capacitances which substantially reduces differential charge loss.

2. (Original) The memory cell in claim 1, wherein said transfer devices have channel regions that extend substantially through said body regions.

3. (Original) The memory cell of claim 1, wherein the substrate comprises a SOI substrate having a buried insulator layer.

4. (Original) The memory cell of claim 3, wherein said body regions are disposed on and contact said buried insulator layer.
5. (Original) The memory cell of claim 2, wherein said transfer devices each have gate electrodes that substantially surround respective channel regions.
6. (Cancelled) The memory cell of claim 1, wherein said first diffused electrode of said first transfer device, said body region of said first transfer device, said second diffused electrode of said first transfer device, and a portion of said first node of said differential storage capacitor are all disposed in sequence on a first rail of semiconductor material.
7. (Currently amended) The memory cell of claim ~~6~~ 1, wherein said first rail of semiconductor material is selected from the group consisting of Group III-V semiconductor materials and alloys thereof, silicon, germanium, and Si-Ge alloys.
8. (Previously Amended) The memory cell of claim 7, wherein said first transfer device has a gate electrode and a first dielectric disposed on said body region, and said differential storage capacitor has a plate electrode and a second dielectric disposed on said first node.
9. (Original) The memory cell of claim 8, wherein said first dielectric has a dielectric constant that is different from that of said second dielectric.

10. (Currently amended) The memory cell of claim 6 1, wherein said first diffused electrode of said second transfer device, said body region of said second transfer device, said second diffused electrode of said second transfer device, and a remaining portion of said first node of said differential storage capacitor are all disposed in sequence on a second rail of semiconductor material disposed adjacent said first rail of semiconductor material.

11. (Original) The memory cell of claim 10, wherein said differential storage capacitor has a dielectric that covers a portion of said first rail of semiconductor material in which said first node is disposed.

12. (Original) The memory cell of claim 11, wherein said differential storage capacitor further comprises a plate electrode disposed over and bridging between both of said dielectric and an adjacent portion of said second rail of semiconductor material in which said remaining portion of said first node of said differential storage capacitor is disposed.

13. (Original) The memory cell of claim 12, wherein said dielectric is disposed between said plate electrode and said portion of said second rail of semiconductor material in which said remaining portion of said first node of said differential storage capacitor is disposed.

14. (Original) The memory cell of claim 13, further comprising a second capacitor dielectric disposed over said plate electrode, and a third capacitor electrode disposed on said second capacitor dielectric.

15. (Original) The memory cell of claim 14, wherein a portion of said third capacitor electrode contacts a portion of said first and second rails of semiconductor material.

16. (Previously Amended) A differential DRAM cell, comprising a plurality of rails of semiconductor material formed on a semiconductor substrate, each rail having source and drain diffusions therein separated by respective fully depleted channel regions that are controlled by a gate electrode to form a transistor, each of said drain diffusions being coupled to a first node of a single differential capacitor disposed on adjacent ones of said plurality of rails, at least one of said adjacent ones of said plurality of rails having a storage dielectric disposed on said first node, and a plate electrode of said differential capacitor being disposed on said storage dielectric which substantially reduces differential charge loss.

17. (Previously Cancelled)

18. (Previously Cancelled)

19. (Previously Cancelled)

20. (Previously Cancelled)